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owe the possession of the single valve, were right in assigning it to China. Doubts arose from the fact that, heretofore, *Triquetra* has been considered to be confined to South America. Mr. Lea stated that he proposed the name should be changed from that he originally proposed, (*T. lanceolata*, as inappropriate to the complete mature shell,) to that of *contorta*, which is very descriptive, and can never be mistaken.

December 23d.

DR. BRIDGES, Vice President, in the Chair.

A letter was read from the Society of Arts, Manufactures and Commerce, dated Adelphi, London, Nov. 22d, 1856, acknowledging the receipt of the Proceedings of the Academy.

The following papers were presented for publication in the Proceedings of the Academy:—

“Note on the collection of Reptiles from Texas, recently presented to the Academy of Natural Sciences of Philadelphia by Dr. A. Heermann. By Edward Hallowell, M. D.” “Description of a new genus of Colubriiform Serpents from California. By Edward Hallowell, M. D. ;” both referred to a Committee consisting of Mr. Haldeman, Dr. Le Conte and Dr. Morris.

“Notices of extinct Vertebrata discovered by Dr. F. V. Hayden, &c. By Joseph Leidy, M. D. ;” referred to a Committee consisting of Dr. Le Conte, Mr. Haldeman and Dr. Wilson.

“Catalogue of Birds collected at Cape Lopez, Western Africa, by Mr. P. B. Du Chaillu, in 1856, with notes and descriptions of new species. By John Cassin ;” referred to Drs. Woodhouse, Wilson and Bridges.

“Description of three new genera, twenty-three new species of Tertiary fossils from California, and one species from Texas. By T. A. Conrad ;” referred to Dr. Wilson, Dr. Leidy and Mr. A. H. Smith.

Dr. Morris mentioned an instance of a tumor taken from the abdomen of a cat, which, upon examination, proved to be true medullary cancer.

December 30th.

DR. BRIDGES, Vice President, in the Chair.

The Committees to which were referred Drs. Leidy's and Hilgard's papers, read 16th inst. ; and Drs. Hallowell's and Leidy's, and Messrs. Cassin's and Conrad's papers, read 23d inst., severally reported in favor of publication in the Proceedings.

Remarks on certain extinct species of Fishes.

By JOSEPH LEIDY, M. D.

Remarks on Edestus vorax, Journ. A. N. S. iil. 159.—Since describing the fossil, supposed to be the fragment of an upper jaw of a fish, to which the name of *Edestus vorax* was given, it has occurred to me that it may perhaps be the portion of a dorsal spine of a huge cartilaginous fish. In the published Proceedings of the American Association for the Advancement of Science, (Providence,

229,) Prof. Hitchcock has given a notice, together with a wood cut, of a fossil from the coal formation of Indiana, which bears a striking resemblance in form to the fragment of *Edestus vorax*. The form of the teeth and their relative position to one another and the bone are the same in both fossils. The bone in the wood cut is not represented as being segmented, but if it is so, and the teeth are coosified with the segments, then the specimen actually indicates a second species of *Edestus*. Prof. Hall informed me, that when he saw the original of the fossil just noticed, that it appeared to him to be an ichthyodorulite.

From the remarks of Prof. Agassiz, appended to Prof. Hitchcock's notice, he regards the latter specimen as "a part of the jaw of a shark allied to the saw fish, or *Pristis* family." Not having seen the original specimen, I am unwilling to consider it as belonging to a member of the peculiar family *Edestina*, of which *Edestus vorax* is the type, but if it does so, it will be widely separated from the *Pristis* family, in which the teeth are inserted into imperfect sockets, and the jaw exhibits no trace of segmentation.

Remarks on Cylindracanthus ornatus, Proc. A. N. S. viii. 12.—The fossil fragments of long, conical bones, which I supposed to be portions of the dorsal spine of a fish, Prof. Agassiz informs me he considers to be the snout of a peculiar genus of sword fishes, which he has incidentally mentioned in the Poissons Fossiles, (t. v. p. 92,) under the name of *Coelorhynchus*. The correctness of this view I do not hesitate to admit, and it appears to receive confirmation by the inspection of a figure (plate xi. fig. 26) which I have since observed in Dixon's Geology of Sussex, representing the snout with its free extremity perfect.

Remarks on Saurocephalus and its allies.—This is the title of a paper recently presented to the American Philosophical Society. The genus *Saurocephalus* was founded by Dr. Harlan on a fragment of an upper maxillary bone with teeth, of a peculiar genus of sphyrenoid fishes, from the cretaceous formation of the Upper Missouri. A second species, under the generic name of *Saurodon* was subsequently described by Dr. Hays from a specimen consisting of the upper and lower jaws, from the cretaceous formation of New Jersey. Prof. Agassiz afterwards described the remains of several sphyrenoid fishes from the chalk of England, which he has erroneously attributed to the genera *Saurocephalus* of Harlan and *Saurodon* of Hays. Dixon, and other authors following Agassiz, have described remains of fishes from the chalk of Europe, and have entirely lost sight of the true *Saurocephalus*. The various remains attributed to the latter appear to be separable into the following species.

1. SAUROCEPHALUS LANCIFORMIS, Harlan: Jour. A. N. S. iii. 337; Med. and Phys. Res. 362; *Saurodon lanciformis* Hays: Trans. Am. Phil. Soc. iii. 476.
2. SAUROCEPHALUS LEANUS, Harlan: Med. and Phys. Res. 362; *Saurodon Leanus*, Hays: Tr. Am. Ph. Soc. iii. 477.
3. PROTOSPHYRÆNA FEROX, Leidy. *Saurocephalus lanciformis*, Harlan, Agassiz: Pois. Fos. v. 102, pl. 25c, figs. 21—29; Dixon: Geol. Sussex 374, pl. xxx. fig. 21, xxxi. fig. 12, xxxiv. fig. 11; Pictet: Traité d'Pal. pl. xxxii. fig. 7; Giebel: Odont. pl. xliii. fig. 7, &c.
4. PROTOSPHYRÆNA STRIATA, Leidy. *Saurocephalus striatus*, Agassiz: Pois. Fos. v. 102, pl. 25c. figs. 17—20; Dixon: Geol. Sussex 375, pl. xxxv. fig. 5.
5. CIMOLICHTHYS LEVEISIENSIS, Leidy. *Saurodon Leanus*, Hays, Agassiz: Pois. Fos. v. 102, pl. 25c, figs. 30, 31; Dixon, Geol. Sussex 373, pl. xxx. figs. 28, 29; xxxiii.* fig. 10, &c.
6. XIPHIAS DIXONI, Leidy. *Saurocephalus lanciformis*, Harlan, Dixon: Geol. Sussex, in note to p. 375, pl. xxxii.* fig. 1.

Notices of Remains of Extinct Turtles of New Jersey, collected by Prof. Cook, of the State Geological Survey, under the direction of Dr. W. Kitchell.

By JOSEPH LEIDY, M. D.

1. *CHELONE GRANDÆVA*, Leidy, Proc. Acad. Nat. Sci. v. 329.

Originally founded on three vertebral plates from the Miocene marl of Salem co., N. J. The collection of the N. J. State Geological Survey contains several costal plates broken into numerous fragments, three anterior marginal plates, and a hyosternal plate also broken into many fragments. A median costal plate restored, measures $8\frac{1}{2}$ in. long to the projecting portion of the rib, which is lost, $3\frac{1}{2}$ in. wide and $\frac{1}{2}$ in. thick. The marginal plates, convex above and at the outer border, and acute within, are $4\frac{1}{2}$ in. long, $2\frac{3}{4}$ wide and 1 in. thick. The broken hyosternal preserves its length, which is 10 in. from the anterior point to the posterior suture. One of the vertebral plates above mentioned, is $2\frac{3}{4}$ in. wide, $2\frac{1}{2}$ in. antero-posteriorly and $\frac{1}{2}$ an inch thick.

The surfaces of all the bones are smooth. The estimated length of the carapace is about 35 to 40 inches, the breadth about 30 inches.

The same collection contains fragments of several lateral and posterior marginal plates of a marine turtle, about the size of that just indicated, but the specimens were obtained from the cretaceous Green Sand formation of Monmouth co. N. J. The specimens have a thick grooved inner border, and gradually become thinner until they terminate in an acute outer border. They are slightly curved upwardly, and their surfaces are smooth. One of the plates has an entire length of $3\frac{1}{2}$ inches; and is $3\frac{1}{4}$ inches broad by $\frac{3}{4}$ of an inch thick at the inner border. Another plate is $4\frac{1}{2}$ in. long, $2\frac{1}{2}$ in. wide and $\frac{3}{4}$ of an in. thick internally.

2. *EMYS FIRMUS*, Leidy.

In company with the latter were found the third, sixth and seventh marginal plates of the left side; the sixth, seventh and eighth of the right side, and portions of the left hyosternal and the right hyposternal plates of a species of *Emys*.

The surfaces of the bones are nearly smooth, and those of the sternum are of great thickness. The seventh marginal plate from its upper border to its acute edge measures $3\frac{1}{4}$ in., and transversely $2\frac{3}{4}$ in. The two sternal plates in the median line are each about 3 in. long, and in the same position are from 7 lines to 1 inch in thickness.

3. *EMYS PRAVUS*, Leidy.

Found with the remains of the preceding species, there are the greater portions of a right hyosternal and a left hyposternal plate of a second species. Surfaces without distinct marks of the scutes, and presenting an eroded appearance. Median suture irregular in its course; and that between the hyo- and the hyposternals is even more irregular. Length of each plate in the median suture $5\frac{1}{2}$ inches; thickness from 5 lines to half an inch. Breadth of ento-sternal space $2\frac{1}{2}$ inches.

4. *PLATEMYS SULCATUS*, Leidy.

Specimens of the fifth, sixth and seventh left marginal plates found with the preceding remains of *Emys* apparently indicate a species of the subgenus *Platemys*. The three bones together measure along their acute margin 8 inches. The seventh plate is 3 inches antero-posteriorly and $2\frac{1}{2}$ high.

The surface of the plates is marked with tortuous grooves.

5. *CHELONE ORNATA*, Leidy.

The collection of this Academy contains portions of two lateral marginal plates of a marine turtle from the green sand of Burlington co., N. J., where they were discovered by Mr. L. T. Germain. The bones are wedged-shaped in trans-

verse section, grooved at the inner border, acute at the outer border, and measure $1\frac{1}{2}$ inches broad. The upper and under surfaces are coarsely but beautifully tuberculated.

Synopsis of a new Classification of the Vegetable Kingdom.

By THEODORE C. HILGARD, M. D.

We lay before the public the result of our observations on the *natural connections* among vegetable forms (relationship), demonstrating them to form a *single file of transitions* or total resemblances, from the first to the last; and furthermore, showing what can be claimed as absolute relations and what as accidental relation or *parallelism*; which parallelisms, if repeated, form laws of rhythmic approximation or collateral relationship; and under any consideration furnishing, we believe, a *consistent base* for *consistent researches on the laws of progressive vegetable development*, and, it may be, organic development generally. At present, occupied with a complete *exposé* and qualification of this scheme, we would be happy beforehand to draw the attention and efforts of botanists, placed mostly under more favorable circumstances than ourselves, to the high importance of this question generally, and to thus solicit their own ideas, observations and communications *on their own grounds*, by which, doubtless, much prolific material might be prepared, elicited and collected.

In the present scheme, we have noted our principal suggestions of relations hitherto not generally adopted or even known before, by *, by which we mean to imply a very close relationship. If thus a member is introduced among a group of families of acknowledged general affinity, it will of course be found enclosed between two stars; for a mere serialization, according to our views, of families notoriously related, we give no express mark, leaving it to the interest of the reader to compare with their various previous serializations.

SERIEI VEGETABILIS PRODROMUS.

CYTEMBRYONEÆ.

seu sporiferæ.

FUNGI: Fermenta,* Mucedines,* Favi,* Uredines, Spumariæ, Lycoperdeæ, Phallæ,* Morchellæ, Agaricæ, Tremellæ, Pezizeæ, Clavariæ, Actidicæ, (sub epidermide corticum nidulantes).

LICHENES: (Sub epidermide corticum nidulantes,) Graphidinæ, Pertusariæ, Lecidicæ,* Parmelinæ, Stictæ, Usneinæ,* Cladoniæ, Bæomyceæ, (thallo amy-laceo in humo diffuso, sporophoriis fungoideis).

ALGÆ: * (Thallo leproïdeo in humi superficie quasi efflorescente, sporangiis gelatinosis scutatis—Chlerococcus s. Protococcus s. Lepraria kermesina s. Favilla variegata, mihi) Favillæ,* fronde gelatinoso diffuente, Nostochinæ, Conferveæ, Diatomæ, Hydrodyctionæ, fronde gelatinoso-cartilagineo vel indurato: Antho-phyceæ, Sorophyceæ, Cytidophyceæ*, Batrachospermeæ,* Characeæ *

MUSEI: (Sphagnum) Bryoidæ, Jungermanniæ, Marchantiæ (sporophoriis stipitatis radiatis solitariis).*

FILICES: (Sporophoriis stipitatis radiatis in spicam congestis) Equisetaceæ,* Lycopodiaceæ, Ophioglosseæ, Hymenophylleæ, Osmundæ, Polypodiæ, Cyathe-acæ, Marattiæ, Marsileæ, Salviniaceæ, (sporis heteromorphis, masculis pollen sistentibus, fœmineis ovulis pollen recipientibus).*

PHYLLEMBRYONEÆ.

seu seminiferæ.

I. MONOCOTYLEDONEÆ.

a medullares:

LORICATÆ: (s. phylloclicæ), utriculis styliiferis monospermis phyllodiis sub-

immersis: Lemnaceæ,* Balanophoreæ, Rafflesiaceæ,* Cycadeæ, Cupressinæ, Abietinæ, Taxinæ, Gnetaceæ,* (Chloranthaceæ?)

β vasculares :

LIRIA: (Ruscus?) Asparageæ, Smilaceæ, (epigyn.) Dioscoreæ (hypogyn.) Roxburghiaceæ,* Parideæ,* (Uvularia) Melanthaceæ,* Curculigeeæ,* Calcectasieæ,* Phormieæ, Agaveæ, Aloinæ, Agapantheæ, Allieæ, Asphodeleæ, Liliæ,* (Lilium.

SCITAMINOSÆ: (epigyn.) Alstroemeria) Amaryllæ, Irideæ,* Pontederææ,* Canaceæ, Zingiberaceæ, Musaceæ, Orchideæ, Apostasieæ, Bromeliaceæ, Hæmodoraceæ,* Hypoxideæ,* (Asteliæ?*)

GRAMINÆ: Luzulinæ, Xyrideæ, Commelynaceæ,* Centrolepideæ, (Philydreæ?) Gramineæ, Cyperaceæ.*

SEADICES: Typhaceæ, Aceroideæ, Aroidæ, Pandanæ, Palmæ.*

II. DICOTYLEDONÆ.

LAURIGERÆ: Piperitæ,* Saururus,* Najadeæ (exogena!), Alismaceæ* (Echinodorus,* Ran. missour.) Ranunculaceæ, Berberideæ,* (Menispermæ?),* Laurinæ, Monimiaceæ (affin. c. Calycanthol),* Proteaceæ, Eleagneæ, Daphnoideæ, Aquilariæ,* Serpentariæ,* Calycantheæ,* Illicieæ, Magnoliæ, Anonæ, Myrsiticææ.*

NELUMBIA: Cabombeæ, Nelumbiaceæ, (hypo-et epigyn.) Nymphaeaceæ* (exogena!) Hydrocharideæ,* (Burmaniaceæ?),* Begoniaceæ.*

GRUINALS: Umbellifera, Araliaceæ, (hypogyn.) Cisseæ (magn. c. Begon. affinit.), Violaceæ, Sarraceniæ,* Nepentheæ,* Droseraceæ, Parnassieæ,* Resedaceæ (*?), Oxalideæ (maxim. c. Viol. affin.), (perigyn.) Geraniaceæ, Tropæolaceæ, (hypogyn.) Balsaminæ (Bals. et Fum.: calyce tetramero [2×2] calcarato; petalis quatuor unguiculatis, per paria lateraliter [in Fum. quatuor petala et apice] connatis!)

RHOEADES:* Fumariaceæ, Papaveraceæ, (Isatis) Crucifera, Capparideæ, (epigyn., max. c. Glaucio affin.) Bartonieæ (Loasaceæ), (Turneraceæ, Bixaceæ, Samydeæ?)

PEPONES: (perigyn.) Homalinæ, Passifloreæ, (epigyn.) Papayaceæ, Cucurbitaceæ, Nhandirobeæ,* Columelliaceæ,* Stylideæ, Lobeliaceæ, Campanulinæ, (Trachelium,* Centranthus) Valerianeæ.

CUPULIFERÆ: Dipsaceæ, synanthereæ: Mutisiaceæ,* Calenduleæ,* (Zacynta!) Cichoraceæ (Scolymus,* Carthamus) Cynareæ (Echinopideæ,* Elephantopeæ) Vernoniaceæ,* Ethulia,* (Ageratum) Eupatorieæ (Steevia,* Bigelovia) Astereæ, (Pulicariæ) Inuleæ, (Tussilago) Tussilagineæ (Adenostyles,* Cacalia) Senecioaceæ (Cineraria,* Cryptostemma, Mataxa etc.) Anthemideæ (Artemisia,* Filago) Gnaphalieæ,* Parthenieæ, Silphieæ,* Eclipteæ, Dahlieæ, Calliopseæ (Bidens,* Sanvitalia), Rudbeckieæ (Obeliscaria,* Leptopoda), Helenieæ, (Actinomeris) Heliantheæ (Gymnopsis),* Melampodieæ,* eleutheranthereæ: Calycereæ, (apetal.) Ambrosiaceæ, cannabinæ: Thelygonum, Cannabinæ,* Datisca,* amen-taceæ: Juglandeæ, Corylus!* Myrica!* Quercus, Fagus Carpinus etc. Betulinæ.

CERASTIFERÆ: (hypogyn.) Populinæ,* (petalif.) Tamariscinæ, Reaumuriaceæ,* Hypericinæ!* Lineæ,* Armeria, Statice,* (apetal.) Nyctagineæ,* (petalif.) Frankeniaceæ,* (apet.) Scleranthæ, (petalif.) Diantheæ, Alsineæ (Polycarpon), (apetal.) Mollugineæ,* Paronychieæ!*

FICOIDÆ:* oleraceæ: Polygonæ, Amarantaceæ, Chenopodeæ, casuarineæ: Salicornieæ,* Podostemeæ, Callitrichinæ,* Batis,* Ceratophylleæ, Myriophyllieæ,* Casuarinæ!* urticaceæ: Plataneæ, Artocarpeæ, Moreæ, Urticaceæ, Ficinæ, Euphorbiaceæ.*

LIMBOSÆ: (petalif.) (epigyn.) Stackhousiaceæ,* (hypogyn.) Strychnæ, Lo-

ganiaceæ, (Antonia,* Syringa) Ligustrinæ,* Gentianeæ (Chlora,* Nyctanthes) Jasmineæ, (Nolana? Cordiaceæ?), Bolivareæ, Apocyneæ, Asclepiadeæ, (Erycibe,* Cuscuta?), Convolvulaceæ,* Cobææ,* Petuniæ,* Goodeniaceæ,* Plumbago,* (Phlox) Polemoniaceæ, Hydrophyllæ (Phacelia,* nukuliferæ: Heliotropium) Borraginæ

PERSONATÆ: (Ajuga) Labiatæ (Lavandula,* Vitex) Verbenaceæ (Verbena stricta, bracteosa!), capsulares: Plantagineæ,* Globularia, Selagineæ, Stilbinæ, Rhinanthaceæ,* Orobanchæ,* Cytinæ,* (compar. Russegggera etc.) Acanthaceæ (Ruellia,* Trevirana) Gesneriaceæ (Columnæ,* Stenochilus etc.) Myoporinæ, (Duboisia myoporoides,*) Salpiglosseæ, Scrophulariææ, (Paulownia), Bignoniaceæ, (Eccremocarpus,* Martynia) Pedalinæ (Josephinia,* Datura) Solanææ, Primulaceæ (incl. Lentibulariæ.)

OLIVARES: Myrsinææ, Sapoteæ, Ebenaceæ (Royena,* Unedo) Rhododendreæ (Kalmia,* Epacris impressa) Epacrideæ, (Fabiana) Ericaceæ, (epigyn.) Vacciniææ, (apetal.) Loranthaceæ,* Santalaceæ,* (perigyn,)* (Phyllicæ,) Rhamnææ, Celastriinæ,* Hamamelidææ,* Pittosporææ,* Hippocrateaceæ,* Aquifoliaceæ,* (Nitrariææ, Putranjivææ?),* Empetreææ,* (Celtis, Ulmus, Fraxinææ?,)* Oleaceææ,* (epigyn.) Nyssa,* Corneææ,* Styraceææ,* Rubiaceææ, Lonicereææ.*

TIARATÆ: (Viburnum,* Hydrangea) Hydrangeææ, Escalloniææ,* Dilleniaceææ,* Cunoniaceææ, Crassulaceææ, Saxifrageææ, Ribesiaceææ,* (Fuchsia) Onagraririææ (Lopezia),* Melastomeææ, Cupheaceææ, Lagerstroemiææ,* Puniceææ, Myrtaceææ,* Trapa,* Rhizophoreææ, Combretaceææ, Cactææ, Mesembryanthemum, (subhypogyn.) Portulacaceææ.*

COLUMNIFERÆ: (hypogyn.) Cistinææ,* Tiliaceææ, Byttneriaceææ, Sterculiaceææ, Malvaceææ, Gyrostemonææ, Phytolaccaceææ,* Coriariææ,* Tremandreeæ,* Chailletiaceææ,* Erythroxyleææ,* Chlænaceææ, Ternstroemiaceææ, Dipterocarpeææ, Lophiraceææ,* (Soulameææ, Trigonieææ?)

ACERA: Polygalææ, (Vochysiaceææ?),* Meliantheææ,* Rhizoboleææ,* Æsculinææ,* Sapindaceææ,* Staphyleaceææ, (Acer platanoid.) Acerinææ, Malpighiaceææ,* Zygo-phylleææ, Rutaceææ, Diosmeææ (Bønninghausenia),* Ptelea, (Amyrideææ? Burseraceææ?)

AMYGDALIFERÆ: Anacardiaceææ, Xanthoxyleææ,* (Meliaceææ,* Cedrelaceææ,) (perigyn.) Aurantiacææ, Simarubææ, Connaraceææ, Ochnaceææ,* Cæsalpinieææ, Mimoseææ, Papilionaceææ, Sophoreææ, Chrysobalanææ,* Amygdaliferææ (Prunus,* Spiræææ) Roseææ (Rosa,* [epigyn.] Cratægus) Pomeææ.

Note on the collection of Reptiles from the neighborhood of San Antonio, Texas, recently presented to the Academy of Natural Sciences by Dr. A. Heermann.

By EDW. HALLOWELL, M. D.

This fine collection, due to the zeal and liberality of our fellow member, consisting of sixty-nine specimens, includes a number new to our Museum, and many duplicates. Nearly all the species have been described by Profs. Baird and Girard, in their various publications in this Academy and elsewhere, but one appearing to be new, viz., *Hyla semifasciata*. The following is the list of the generic and specific names.

Ord. *CHELONII*.

Fam. *CHELONIDÆ*.

STAUBOTYPUS ODORATUS, (young.)

Ord. *SAURII*.Fam. *IGUANIDÆ*.*SCELOPORUS SCALARIS*, Wieg.*SCELOPORUS THAYERII*, B. and G.Fam. *LACERTIDÆ*.*CNEMIDOPHORUS GULARIS*, B. and G.Fam. *CHALCIDIDÆ*, (*CYCLOSAURES*, Dumeril et Bibron.)1st Sub. Fam. *CYCLOSAURA PTYCHOPLEURA*, D. & B.*OPHISAURUS VENTRALIS*, var.

This specimen of *Ophisaurus* differs from the others in the collection of the Academy. Color olive beneath; sides black spotted, the spots in longitudinal rows, their posterior margins bordered with white; two olive colored longitudinal stripes along the back and greater part of tail; head blackish, white spotted above and upon the sides; body olive colored above, white spotted. Total length 26 inches; tail 18.

Ord. *OPHIDII*.(2d Sub. Ord. *AGLYPHODONTES* ou *COLUBERIFORMES*, D. and B.)Fam. *ISODONTIDÆ*, D. and B. (*Serpentes innocui*.)*HERPETODRYAS ÆSTIVUS*.*HERPETODRYAS FLAVIGULARIS*.*ELAPHS LINDENHEIMERII*.(Syn. *SCOTOPHIS LINDENHEIMERII*, B. and G.)*ABLATES TRIANGULUM*, (var. *EXIMIUS*.)Fam. *LEPTOGNATHIDÆ*, D. and B.*STORERIA*, (*ISCHOGNATHUS*, D. and B.) DeKayi.

Numerous specimens.

Fam. *SYNCRATERIDÆ*, D. and B.*TROPIDONOTUS ORDINATUS*, var.

(EUTAINIA MARCIANA, B. and G.)

TROPIDONOTUS ERYTHROGASTER.5th Sub. Ord. *SOLENOGLYPHES* DITS *THANATOPHIDES*, D. and B. (*venenosi*.)Fam. *CROTALIDÆ*.*CROTALUS CONFLUENTUS*.*CROTALUS ATROX*, B. and G.*TOXICOPHIS PUGNAX*.Ord. *BATRACHII*.2d Sub. Ord. *ANGURA*.1st Group. Les *PHANEROGLOSSES*, D. and B.2d Fam. *HYLIDÆ*.*HYLA SEMIFASCIATA*, nob.

Char. Of moderate size, larger than *lateralis*; snout less acute than in latter species; head depressed, snout rounded, nostrils small, considerably nearer to the extremity of the snout than the anterior margin of the orbit, a line and three-quarters apart; eyes not remarkably prominent; body elongated, smooth above,

except towards occiput; head granulated above; abdomen and under part of thighs largely granulated; tongue obcordate, notched posteriorly, free to some extent posteriorly and upon the sides, attached in front; vomerine teeth in two patches between the posterior nares; the latter subcircular; fingers webbed at their bases; toes more largely webbed, the web of the fourth toe extending to the distal extremity of the anti-penultimate phalanx.

Color. Bluish above, (probably green during life,) green upon the extremities; the greater part of abdomen and the under part of thighs ochraceous; chin and throat yellow; a white band extending above the margin of the upper jaw, passing beneath the eye, and terminating midway upon each side of the body; a white band commencing midway upon the posterior aspect of the tibia, extending along the outer margin of the tarsus and terminating at the base of the second phalanx of the fifth toe or a little beyond it; no stripe upon the tibia anteriorly.

Dimensions. Length of head $6\frac{1}{2}$ lines; breadth 7; length from extremity of snout to posterior extremity of body 2 inches $1\frac{1}{2}$ lines; length of arm 5 lines; of forearm 5; of band to extremity of longest finger $7\frac{1}{4}$; of thigh 1 inch 2 lines; of tibia 1 inch 1 line; of tarsus $7\frac{1}{2}$; of sole to extremity of longest toe 11 lines.

Habitat. Texas.

Gen. Remarks. This is a larger species than *Hyla lateralis*, the length of which, according to Daudin, is "un pouce et demi au plus." Dr. Holbrook's specimen, however, measured $1\frac{3}{4}$ inches. The largest specimen in the collection of the Academy measures $1\frac{1}{2}$ inches, (Fr.) It is a much more slender animal than *semifasciata*. In *lateralis*, (viridis, Holb.) the lateral stripe extends as far as the anus, and there is a white band running the whole length of the tibia, both anteriorly and posteriorly. The anterior band is absent in *semifasciata*.

3d Fam. BUFONIDÆ.

BUFO NEBULIFER, Girard.

Syn. BUFO GRANULOSUS, B. and G.—Proceed. A. N. S. vol. vi. p. 173.

Char. Head triangular, depressed, about as broad as long, with two sharp elevated ridges extending from the extremity of the snout along the inner margin of the eyelids; this ridge bifurcates about two-thirds of the distance along the inner margin, the external branch terminating in a thick ridge immediately above the tympanum, which itself sends off a prolongation anteriorly, passing down between the orbit and the tympanum, and terminating on a level with the inferior margin of the former; the supra-orbital ridge sends off also anteriorly a prolongation or branch, which passes down obliquely in front of the orbit, terminating in a line with its inferior border, leaving a triangular space upon the side of the head anteriorly; the internal branch above terminates on a level with the superior margin of the parotid gland about a line from it, and reaches nearly to the posterior margin of the occiput; the extremities of the two are two lines and a half apart posteriorly. These elevated and well defined ridges produce several well marked depressions, or rather concavities, the one long and broad, upon the middle of the upper part of the head, the other two lateral and posterior, and much smaller, the posterior margin formed in part by the anterior margin of the parotids; nostrils small, just within the anterior extremity of the supra-orbital ridge; tympanum rather small, round, very apparent; no teeth in the upper or lower jaw; no palatine or vomerine teeth; internal nares rather large, suboval; a slightly elevated ridge in front; upper jaw notched anteriorly; tongue long, narrow, broader posteriorly, erectile, not notched behind, attached in front, free to some extent laterally; eustachian foramina triangular in shape, rather smaller than anterior nares apparently; extremities moderate; toes 4—5, first and fourth finger longest; two subpalmar tubercles, with a well marked ridge in the middle; fourth toe much the longest; posterior extremities webbed at the base, the web of the fourth toe reaching to the base of the ante-penultimate phalanx; no webs anteriorly; body moderately robust, thickly covered

with warts; parotids small, covered with pores; under parts thickly covered all over with granulations.

Coloration. Brownish black above, with a yellowish dorsal band extending from the occiput to near the anus; on either side of this a number of jet black blotches, not always very distinct; head olive colored above or fuscous, a black spot in front of each parotid and upon occiput, in the latter situation sometimes coalescing so as to form an irregular band; the spots in front of the parotids not always present; an olive colored irregular broad band upon the sides, commencing at the parotids and extending upon the thighs; thighs mottled posteriorly with yellow; extremities broadly banded with brown, and narrowly with yellow; under parts ochraceous. In a specimen procured from Prof. Agassiz, and deposited in the Academy by Dr. Holbrook, the ground color of the body above is black, the dorsal and lateral bands fuscous, extremities banded with black, under parts fuscous.

Dimensions of largest specimen. Length 3 inches (Fr.) from extremity of snout to posterior extremity of body; length of head 1 inch 2 lines; greatest breadth 1 inch 2 lines; length of arm 8 lines; of forearm 9 lines; of palm of hand to extremity of longest finger 8 lines; of thigh 1 inch 1 line; of tibia 1 inch 1 line; of tarsus $8\frac{1}{2}$ lines; of sole to extremity of longest toe 1 inch.

Hab. Texas. Seven specimens in Museum of Acad. Nat. Sciences.

Gen. Remarks. This toad is decidedly South American in its type, differing entirely in the configuration of the head from any of the North American species.

It is remarkable, as we have before observed, that the fresh water turtles in Texas and New Mexico appear to be so rare, and we have as yet received none of the Salamandridæ from either of these regions, with the exception of an *Ambystoma*, viz., *A. nebulosum*.

Besides the above we have recently received from Dr. Hammond, of the U. S. Army, stationed at Fort Riley, Kansas, a further collection of reptiles, viz., *Crotaphytus collaris*, two specimens. One of these has a double interrupted black collar, the body above marked with transverse lines of white spots, the interspaces minutely white spotted; chin and tail marked with bluish; abdomen, under parts of extremities and tail immaculate; intermaxillary teeth small, followed by others larger, conical, the posterior teeth tricuspid; palatine teeth very remarkably developed; tongue slightly notched in front and free, emarginate posteriorly; eighteen femoral pores on each side. Three specimens of *Phrynosoma Douglassii*, one of *Cnemidophorus gularis*, B. and G., one of *Ophisaurus ventralis*, (striatulus, Cuv.,) two of *Coryphodon constrictor*, (young,) one 1 foot 10 lines in length, with the usual markings; one of *Elaphis confinis*? (*Scotophis confinis*, B. and G.,) 1 foot 2 inches 8 lines in length; 25 rows of scales; abdom. scut. 233; sub. caud. 62; 29 black blotches upon body, 8 upon tail, a smaller intermediate lateral row of black spots on each side; abdomen black spotted. (We have recently received the same species from Dennisville, Cape May County, New Jersey, presented by our fellow member S. Ashmead. In this specimen, which is smaller, there are from 25 to 27 rows of scales.) One of *Ablabes triangulum*, (var. *calligaster*;) 25 rows of scales; a triangular spot with its base resting on the frontal; the apex extending one and a half lines behind the posterior margin of the occipitals, and two long blotches commencing about half a line behind the post-oculars, each about three-fourths of an inch in length; transverse blotches narrow. One fine specimen of *Coronella*, similar to the one described in the last number of the Proceedings, but much larger, measuring 1 foot $11\frac{1}{2}$ inches in length, and two inches in circumference. (The red blotches in this specimen are for the most part much wider apart, the black rings approaching each other near and upon the tail; in one spot near the tail the red has almost totally disappeared.) One *Coronella Sayi*, (young,) var. see Marcy's Report, pl. vii. One *Heterodon nasicus*. One *Bufo punctatus*, (young of *Americanus*.) Three *Ambystoma*, (var. *luridum*,) and two *Siredons*. These

specimens are stouter than those in the collection of the Academy from Santa Fé, New Mexico, (lichenoides, Bd.?) The ground color is yellowish mingled with olive, the surface minutely punctated with small black dots; the surface of head, body and tail covered with innumerable pustulations; these are much less distinct upon the abdomen; the small lichenoid patches are quite distinct. Notwithstanding the greater narrowness of the head and body in the Santa Fé specimens, and less obtuse muzzle, we are not prepared to consider them specifically distinct from those from Kansas—(Bridger's Pass, expedition in summer of 1856.) The Coronella, Heterodon, Ophisaurus and specimens of Ambystoma, are all marked from Bridger's Pass. The others from neighborhood of Fort Riley, Kansas.

A short time ago we received from Dr. Miles, of the town of Flint, Michigan, a small collection of reptiles, including *Tropidonotus ordinatus*, *parietalis*, *liberis*, *Herpetodryas vernalis*, *Storeria occipito-maculata*, B. and G., and one Scinck, which appears to be new, and of which the following is a description:

PLESTIODON VITTIGERUM, nob.

Char. Color grey above, with three broad lighter colored stripes extending the whole length upon the back, and becoming lost upon the tail; two narrower ones upon the sides; a broad black band between the external of the dorsal vittæ and the inferior lateral stripe; under parts white.

Description. The head is of moderate size, slightly swollen at the temples; the rostral plate rounded, heptagonal, broader than long; two supero-nasals contiguous; a broad internasal; two fronto-nasals; a frontal pentangular, broader in front, the sides slightly excavated; two fronto-parietals somewhat larger than the fronto-nasals; an inter-parietal longer than broad; two parietals; nostril between two plates; a naso-frenal; two frenals, the second larger but not so high as the first; two freno-orbitars; eight superior labials; five supra-ocular plates; body moderate; tail longer than head, neck and body; 28 rows of broad and smooth hexagonal scales, rounded posteriorly; three or four scales in front of the auricular openings; third and fourth fingers of nearly equal length, fourth toe the longest.

Coloration. Head grayish, obscurely spotted and maculated with black; dorsal vittæ margined with interrupted spots of black; extremities maculated with black above; a narrow white stripe upon the thigh posteriorly; under parts white, immaculate.

Dimensions. Length of head 7 lines; breadth $5\frac{1}{2}$; length of body to vent 2 inches 1 line; of tail 3 inches 10 lines; of arm $2\frac{3}{4}$ lines; of forearm 3 lines; of palm to extremity of longest finger 4 lines; of thigh 4 lines; of leg $3\frac{1}{2}$; of sole to extremity of longest toe 6 lines.

Habitat. Neighborhood of Flint, Michigan. One specimen in Mus. Acad. presented by Dr. Miles.

Gen. Remarks. This may possibly be a variety of *Plestiodon quinquelineatus*; it differs, however, much from the latter in the coloration, and in the greater breadth of the scales.

Description of a new genus of Colubriform Serpents from California.

By EDW. HALLOWELL, M. D.

Gen. LAMPROSOMA.

Char. Teeth of equal length, posterior ones not channelled; head small, snout rounded, internasals somewhat smaller than prefrontals; frontal short and broad; nostril in a single plate; a long and narrow frenal; one antocular, two postoculars; body long and slender, depressed; scales smooth, quadrangular, brilliant; tail short, obtuse; subcaudal scutes bifid.

LAMPROSOMA OCCIPITALE, nob.

Syn. RHINOSTOMA OCCIPITALE, Proceed. A. N. S. vol. vii. 1854, p. 95.

Char. 15 rows of smooth quadrangular scales; color milk white above, with 34 transverse black bands, including one upon posterior part of head; six complete rings of black upon the tail, and one incomplete just behind the anus; jaws, chin, throat and abdomen white; interspaces between rings upon under part of tail white. Length of head, neck and body 10 inches 1 line; of tail 1 inch 7 lines. Ab. scut. 158; sub. caud. 34.

Habitat. Mohave Desert, Southern California. One specimen in Smithsonian Institution, collected by Dr. A. L. Heermann.

Gen. Remarks. Allied to Simotes, but in the latter the nostril opens between two plates, and the snout is conical.

Notices of extinct Vertebrata discovered by Dr. F. V. Hayden, during the expedition to the Sioux country under the command of Lieut. G. K. Warren.

By JOSEPH LEIDY, M. D.

MAMMALIA.

1. MERYCHIPPUS INSIGNIS, Leidy.

Founded upon a first and second molar of the upper jaw of a remarkable equine animal, in the structure of the teeth approximating the ruminant family.

The teeth are inserted by distinct fangs; and the crowns strikingly resemble the true molars of ruminants. There are four demiconoidal lobes holding the same relationship with one another as in the latter, especially as in the Deer. The outer lobes have almost the exact form as in the true molars of *Oreodon*. The inner lobes resemble those of ruminants, but are complicated with accessory folds as in the horse. No cementum fills up the interspaces of the lobes nor does it appear to have existed as part of the structure of these teeth.

Antero-posterior diameter of first molar 12 lines; transverse 8 lines.
 “ “ “ second molar 10 “ “ 9 “

From the tertiary beds of Bijoux Hills on the Upper Missouri.

2. HIPPARION (HIPPODON) SPECIOSUM, Leidy. Pr. A. N. S. VII. 90.

Accompanying an inferior molar, there is an unworn upper molar and portions of three other upper molars, worn away in various degrees, which appear to be the teeth of *Hipparion*, and appear to belong to the same animal as the tooth referred to *Hippodon*. The inferior molar slightly worn is $1\frac{1}{4}$ inches long, 10 lines wide, and 4 lines thick. The unworn upper molar is 20 lines long, 11 lines antero-posteriorly, and 9 lines transversely.

Found with the preceding at Bijoux Hills.

3. LEPTARCTUS PRIMUS, Leidy.

Founded on a single specimen of an upper molar tooth, which bears considerable resemblance to the fourth superior molar of the Coati. The tooth has a trihedral crown as in the latter and also has three fangs. The inner pair of tubercles of the crown are nearly equal in size; that anteriorly being less well, and that posteriorly better developed than in the Coati. Of the three outer tubercles that anteriorly is more like a talon than a cusp, and the posterior tubercle is better developed in its relation with the median one. I think the specimen represents a genus allied to the *Nasua*.

Found with the preceding at Bijoux Hills.

4. THESPESIUS OCCIDENTALIS, Leidy.

Among the collection of vertebrate remains are two apparent caudal vertebrae and a first phalanx of some huge animal, which I suspect to be a *Dinosaurian*, though they may have belonged to a mammalian. The phalanx and one

vertebra were discovered by Dr. Hayden in the lowest member of the Lignite formation of Grand River, Nebraska. The other vertebra was obtained by Capt. Alfred Sully from an Indian, and is presented to the Academy. The specimen Dr. Hayden supposes to have been derived from the same locality.

The vertebral bodies very much resemble those of the lumbar vertebræ of the elephant in form and size, but they possess articular processes of a very distinct character, and one inch in diameter, for chevron bones. Viewed in front, the bodies are quadrately oval in outline and notched above, one of them being 5 inches in diameter, the other $4\frac{1}{2}$ inches deep and $4\frac{1}{4}$ transversely. Their length is about $2\frac{3}{4}$ inches; their anterior face is convex, and their posterior face is concave, with a depth of almost half an inch. The transverse processes, broken away, projected from the conjunction of the vertebral arches and bodies. The spinal foramen, retained entire in the smaller specimen, is circular, and one inch in diameter.

The first phalanx is 5 inches long, $4\frac{1}{2}$ wide at base and $3\frac{1}{2}$ thick in the same position; and 4 inches wide and $2\frac{1}{2}$ thick at the distal end. Deep concavities exist each side of the latter for the lateral ligaments. The proximal articulation is a transverse reniform concavity; the distal articulation a transverse convexity, slightly concave towards the middle.

CHELONIA.

5. *COMPSEMYS VICTUS*, Leidy.

Founded on a vertebral plate, the greater portion of the fifth costal plate, and a fragment of the last costal plate, from Long Lake, Nebraska.

The vertebral plate is an inch broad and nearly the same length. The fifth costal plate is $1\frac{1}{4}$ inches wide, and 2 lines thick, and in its perfect condition appears to have been almost 4 inches long. The fragment of a last costal plate is 3 lines thick.

The marking of the third or fourth vertebral scutes upon the fifth costal plate indicates them to have been about 2 inches in width.

The free surface of all the bones is thickly studded with granular tubercles, which give to it a shagreened appearance, different from anything observed in recent turtles.

6. *EMYS OBSCURUS*, Leidy.

Found with the preceding, were the fragments of a costal plate, which is 16 lines wide, $1\frac{1}{2}$ lines thick, and when perfect appears to have been almost 5 inches long. Its free surface is smooth.

7. *TRIONYX FOVEATUS?* Leidy. Proc. A. N. S., VIII. 73.

Fragments of a last costal plate, of the right side, 4 lines in thickness, were found with the preceding.

PISCES.

8. *MYLOGNATHUS PRISCUS*, Leidy.

Founded on an upper maxillary bone of a small chimæroid fish, found in company with the above mentioned remains of turtles, at Long Lake, Nebraska. The bone forms a narrow triangle which, in its perfect condition, appears to have been only a little over an inch in length, and it is $3\frac{3}{4}$ lines wide at the posterior part. Two teeth occupy the whole length and breadth of its surface. Their free surface is convex and porous. The posterior one is almost 8 lines long, and the anterior one about 6 lines.

Descriptions of three new genera; twenty-three new species Middle Tertiary Fossils from California, and one from Texas.

By T. A. CONRAD.

JANIRA, Shum.

Janira bella. Subtriangular; inferior valve convex, ribs 14 or 15, square, about as wide as the intervening spaces, very prominent, some of them with

one or two longitudinal obsolete lines; disk finely wrinkled concentrically; upper valve flattened, deeply depressed towards the apex; ribs rather narrower than those of the opposite valve, obscurely bicarinated above, disk ornamented with close, fine, squamose, concentric wrinkles. Length 4 inches; height $3\frac{3}{4}$ inches.

Locality.—Santa Barbara, Cal. Dr. Newberry.

PALLIUM, Klein.

1. *P. estrellanum*. Suborbicular; lower valve ventricose, slightly undulated; ribs 17, broad, little prominent, convex, with an intermediate linear rib, from which the larger ribs are separated by an impressed line; upper valve convex, somewhat undulated, ribs flattened and the intermediate small ribs with a longitudinal impressed line on the lower part of the valve. Height $2\frac{1}{2}$ inches.

Locality. Estrella valley, Cal. Dr. Newberry.

2. *P. crassicardo*. Obtusely ovate or suborbicular, thick; lower valve ventricose; ribs 15—16, elevated, back rounded, sides flattened, disks radiostriate, 9 or 10 on the ribs, intervals of ribs concave, umbo or whole disk at wide intervals having a tendency to be humped and nodose; upper valve convex or slightly ventricose; ears large, equal; hinge thick, with prominent, acute, oblique teeth; fosset profound; muscular impression very large. Height 5 inches.

Locality. Monterey Co., Cal. A. S. Taylor.

PECTEN, Lin.

1. *Pecten Meekii*. Suborbicular, compressed; ribs 19 not very prominent, convex-depressed on the back, angulated on the sides. Height $6\frac{1}{2}$ inches.

Locality. San Raphael Hills. Mr. Antisell.

2. *P. altiplectus*. Obtusely ovate; ribs squamose, slender, 9 of them distant profoundly elevated. Height $2\frac{1}{2}$ inches.

Locality. With the preceding. Mr. Antisell.

PACHYDESMA, Conrad.

P. Inezana. Triangular, equilateral; anal side subcuneiform; teeth robust.

Locality. Santa Inez Mountains. Mr. Antisell.

MULINIA, Gray.

M. densata. Subovate, ventricose, thick, very inequilateral; posterior side very short comparatively, contracted; extremity subtruncated, much above the line of the base; posterior basal margin very oblique and contracted; anterior end obliquely truncated; anterior basal margin rounded; summits prominent, distant; lateral teeth very robust and prominent; inner margin entire. Length $2\frac{2}{3}$ inches.

Locality. Santa Barbara, Cal. Dr. Newberry.

THRACIA, Leach.

Thracia mactropsis. Subtriangular, subequilateral, ventricose; anterior side cuneiform or subrostrated, posterior end regularly rounded; ligament margin very oblique; base regularly and profoundly rounded; umbonal slope abruptly rounded; summit prominent, posterior to the middle of the valve; anterior extremity angular. Length 1 inch.

Locality.—Monterey Co., California. Dr. Newberry.

MYA, Lin.

Mya Montereyana. Suboval, slightly ventricose, thin, inequilateral; summit hardly prominent; anterior end subtruncated? posterior end acutely rounded,

the extremity situated more nearly on a line with the beak than the base; disk concentrically rugoso-striate. Length $1\frac{1}{2}$ inches.

Locality.—Monterey, Cal. Dr. Newberry.

ARCA, Lin.

1. *Arca canalis*. Subtrapezoidal, ventricose; ribs 24—26, flattened, scarcely prominent, divided by a longitudinal furrow; disk concentrically wrinkled; umbo ventricose; summits prominent, remote from the centre. Length $2\frac{1}{2}$ inches. Height $1\frac{3}{4}$ inches.

Locality. Santa Barbara, Cal.

2. *Arca trilineata*. Trapezoidal, somewhat produced, inequilateral, ventricose; ribs 22—24, scarcely prominent, square, wider than the intervening spaces, ornamented with three impressed or four raised lines; disks concentrically wrinkled; summits prominent; beaks approximate. Length 3 inches.

Locality.—Occurs with the preceding.

3. *Arca congesta*. Rhomboidal, ventricose, inequilateral; ribs about 27, convex on the back, wider than the intervals which are transversely striate; anterior ribs crenate; ligament margin elevated; posterior end obtusely rounded, summits prominent. Length $\frac{5}{8}$ inch.

Locality.—California. Dr. Newberry.

AXINÆA, Poli. PECTUNCULUS, Lam.

Axinæa barbarensis. Lentiform, subequilateral, concentrically wrinkled; ribs about 37, scarcely prominent, flat, defined by an impressed line, wanting on the submargins and obsolete towards the base; summits slightly prominent. Length $1\frac{3}{8}$ inches; height rather more than $1\frac{1}{4}$ inches.

ARCOPAGIA.

Arcopagia medialis. Oval, both valves slightly ventricose anteriorly; upper valve much contracted or concave towards the umbonal slope which is angulated; post-umbonal slope slightly contracted in the middle, emarginate at base; the corresponding slope of the lower valve deeply folded, reflected towards the extremity; disks rugoso-striate concentrically. It has an affinity to *A biplicata*, Conrad, but is proportionally longer.

Locality.—Monterey Co., Cal. A. S. Taylor.

TAPES, Sowerby.

Tapes lineatum. Oblong-oval, ventricose; buccal side short, extremity obtusely rounded; anal side elongated, end regularly rounded; ligament margin long, oblique, straight; disks radiated with fine, unequal lines, except on the post-umbonal slope which is entire. Length 2 inches.

Locality.—Dr. Newberry.

CRYPTOMYA, Conrad.

Cryptomya ovalis. Oval, compressed, posterior end truncated; umbonal slope angulated on the umbo; beaks medial; basal margin medially truncated; disk medially flattened.

Locality.—Monterey Co., Cal. Dr. Newberry.

CYCLAS, Klein. LUCINA, Lam.

Cyclas tetrica. Suboval, compressed? very inequilateral, somewhat oblique; disks concentrically striate; larger striæ prominent, acute, distant, the intervals with 4 or 5 unequal, fine, wrinkled lines; beaks scarcely prominent above the dorsal line. Length $1\frac{3}{4}$ inches.

Locality.—Monterey Co., Cal. A. S. Taylor.

SPONDYLUS.

Spondylus Estrallensis. Obtusely ovate; both valves ventricose; ribs 17, not very prominent, rounded, rugose; valves with radiating striæ.

Locality.—Estrella valley. Mr. Antisell.

DOSINIA, Scopoli.

1. *Dosinia longula*. Regularly ventricose, inequilateral, longitudinally oval; margins and base regularly rounded; summit prominent; buccal margin more obtusely rounded than the anal. Length 1 1-5th inch.

Locality.—Monterey, Cal. Dr. Newberry.

2. *Dosinia alta*. Obtusely subovate or suboval from beak to base; posterior margin curved, profoundly oblique; base regularly and rather acutely rounded; summits prominent, oblique; surface marked with numerous fine, concentric, impressed lines; beaks medial. Height 4 inches.

Locality.—Monterey, Cal. Dr. Newberry.

LUTRARIA.

Lutraria transmontana. Longitudinally ovato-triangular, inequilateral, thin; anal side subcuneiform; surface concentrically indented, umbo irregularly plicated.

Locality.—Rancho Triumpho, near Los Angeles. Mr. Antisell.

SCHIZOPYGA, Conrad.

Bucciniform; columella concave, plicate; lower part of body volution deeply channelled, the channel emarginating the columella.

Schizopyga Californiana. Volutions rounded, having revolving ribs and longitudinal furrows, giving the ribs a nodulous character; basal excavation profound.

Locality.—Santa Clara, Cal. Dr. Newberry.

TAMIOSOMA, Conrad.

An elongated tube, apparently entire, porous and cellular throughout its substance; interior filled with numerous irregularly-disposed vaulted cells connected by longitudinal slender tubes, funnel-shaped beneath; aperture resembling that of *Balanus*.

Tamiosoma gregaria. Subquadrangular, elongated, longitudinally furrowed and striate, and having fine, undulated, transverse lines; mouth small, oblique; upper part of the tube oblique, deeply indented or Balaniform, and coarsely striated longitudinally. Length 8 inches.

Locality.—Monterey Co., California. A. S. Taylor. Growing in clusters like *Balani*. No sutures, indicating separate valves; cells very thin plates, convex surface downwards.

Echinoderms.

ASTRODAPSIS, Conrad.

Suboval, depressed; ambulacral areas elevated or ridged; ambulacra nearly straight, widely open at the extremity; mouth central; anus submarginal, beneath; radiating grooves as in *LAGANUM*.

Astrodapsis Antiselli. Pentangular, suboval; ambulacral ridges rounded on the back, straight and oblique on the sides; interambulacral areas profoundly depressed, angulated in the middle; point of divergence of the ambulacra depressed below the level of the ridges, not quite central, but anterior to the middle; anus small, almost marginal. Length $1\frac{3}{4}$ inch.

Locality.—Monterey Co., Cal. A. S. Taylor.

MELLITA, Klein.

Mellita Texana. Suborbicular; very wide anterior to the middle; ambulacra moderately curved, nearly closed; lunules 5, moderately wide.

Locality.—Texas. Dr. Francis Moore.

Form of *M. testinata*, Klein, but the ambulacra are proportionally longer and narrower, and the middle lunule much shorter. (A tertiary fossil.)

Catalogue of Birds collected at Cape Lopez, Western Africa, by Mr. P. B. DuChaillu, in 1856, with notes and descriptions of new species.

By JOHN CASSIN.

During some months passed at Cape Lopez, in which Mr. DuChaillu made the present collection of birds and collections of great interest in other departments, his researches extended to a distance of about sixty miles from the coast. The larger part was, however, collected in the immediate vicinity of Cape Lopez.

Latterly Mr. DuChaillu has not sent in his collections specimens of common birds previously transmitted. This fact will account for omissions of well-known species in the present catalogue.

1. GYPOHIERAX ANGOLENSIS, (Gmelin.)

Falco angolensis, Gm. Syst. Nat. i. p. 252, (1788.)

Gray's Genera, i. pl. 4. Jard. & Sel. Ill. Orn. N. S. pl. 13.

Young ♂. Entire plumage pale fuscous, very light on the throat and abdomen, and nearly white on the occiput. Quills and tail brownish black, bill and tarsi greenish yellow.

This is the only specimen of the young of *Gypohierax* that has ever come under our notice, though we have frequently seen the adult. In this specimen the pale brown represented in Jard. and Selby Ill., as cited above, extends to the entire body and head, the occiput only being nearly white. It has attained the size of maturity.

2. LANIUS SMITHII, Fraser.

Lanius Smithii, Fraser, Proc. Zool. Soc., London, 1843, p. 16.

Specimens of both sexes, which are very similar, the females being only slightly lighter in color.

3. LANIARIUS PELI, (Bonaparte.)

Malaconotus Peli, Bonap. Consp. Av. p. 360, (1850.)

Laniarius lepidus, Cassin, Proc. Acad. Philada., vii. p. 327, (1855.)

This appears to be a species of frequent occurrence in equatorial Africa.

We committed the indiscretion of describing and naming this bird, not being able to recognize it from the short description in Bonaparte's Consp. as above, which is comprised in exactly eleven words. The only use of such descriptions is, that they answer for a sort of *caveat* to all other naturalists against describing any species at all similar; and to such extent is this obscure and absurd style persisted in by a few European ornithologists, that there are now about enough irrerecognizable descriptions published to cover all possible birds that may be rediscovered for some time to come.

For the means of determining this species we are indebted to that accomplished and accurate ornithologist Dr. Hartlaub, of Bremen, whose description is in Cabanis' Journal, 1855, p. 358.

4. TEPHRODORNIS OCREATUS, Strickland.

Tephrodornis ocreatus, Strickl., Proc. Zool. Soc., London, 1844, p. 102.

Fraser, Zool. Typ. pl. 36.

Several specimens, which are almost precisely as figured by Fraser as above, and though all have a general aspect of immaturity, yet are very nearly alike. The females have rather more of the black edgings on the breast and throat, and are slightly smaller. The integral character of the scales of the *tarsi* holds

good in all these specimens, and is a very curious character, the *tarsus* having apparently but a single scale in front and another on each side.

5. *MUSCIPETA FLAVIVENTRIS*, Verreaux.

Muscipeta flaviventris, Verr. Cab. Jour., 1855, p. 103.

One of the most beautiful species of this group and having the under parts of a rich orange color, quite peculiar. The adult male is described by M. Verreaux; the female is smaller and of lighter colors, back and throat approaching bluish cinereous, under parts nearly as in the male.

6. *PLATYSTIRA MELANOPTERA*, (Gmelin.)

Muscicapa melanoptera, Gm. Syst. Nat. p. 939, (1788.)

Jard. & Sel. Ill. pl. 9.

Not to be distinguished from specimens obtained at more northern localities on the coast.

7. *ARTOMYIAS FULIGINOSA*, Verreaux.

Artomyias fuliginosa, Verreaux, Cabanis' Jour., 1855, p. 104, (March.)

Butalis infuscatus, Cassin, Proc. Acad. Phila., vii. p. 326, (April, 1855.)

The adult is described by M. Verreaux and myself as above. The young is of the same general colors, but with the abdomen, rump and wing coverts thickly spotted with white, which predominates in the middle of the abdomen, and marks the tips of the wing coverts.

This is a most singular form of *Muscicapa*, and so nearly approaching the general characters of *Hirundo*, that although specimens have been in my possession for nearly twenty years, I never felt fully assured that it was not an obscure style of *Cotyle*, until informed by Mr. DuChaillu that it is strictly a Fly-catcher in its habits. It was first sent by Dr. MacDowell from St. Paul's River.

8. *PRATINCOLA SALAX*, Verreaux.

Pratincola salax, Verreaux, Rev. et Mag. Zool., 1851, p. 307.

Messrs. Verreaux describe the male of this handsome species. Specimens marked as females in Mr. DuChaillu's collection have the upper parts grayish, with obscure longitudinal stripes of dark brown. Throat gray, breast and flanks dull chestnut, abdomen and rump white.

9. *MACRONYX FLAVIVENTRIS*, Swainson.

Macronyx flaviventris, Sw. B. of W. Af. i. p. 215.

Jard. & Selby, Ill. Orn. N. S. pl. 22.

In mature plumage and very nearly as described and figured above. *Alauda crocea*, Vieill. is a very distinct affair and not much like the present bird.

10. *ANTHUS GOULDII*, Fraser.

Anthus Gouldii, Fras. Proc. Zool. Soc., London, 1843, p. 27.

Plenty of specimens and all of one species, but not clearly recognizable from Fraser's description. They are, however, obscurely marked, but about the size and general style as described.

11. *ANDROPADUS LATIROSTRIS*, Strickland.

Andropadus latirostris, Strickl. Proc. Zool. Soc., 1844, p. 100.

Numerous specimens. There are not, however, in the present collection any specimens of the allied but quite distinct species *A. gracilirostris*, Strickl., though both are in collections formerly received from the river Moondah.

12. *TRICOPHORUS CALURUS*, Cassin.

Tricophorus calurus, Cassin, Proc. Acad. Philada., viii. p. 158, (1856.)

Specimens presenting no characters other than as described.

13. *TRICOPHORUS NOTATUS*, Cassin.

Tricophorus notatus, Cassin, Proc. Acad. Philada., viii. p. 158, (1856.)

Precisely similar to specimens originally described by me.

14. *SYNCOPTA TINCTA*, Cassin.
Syncopta tinctoria, Cassin, Proc. Acad. Philada., vii. p. 325, (1855.)
 In plumage exactly the same as the original specimens.
10. *SYLVETTA MICROURA*, (Rüppel.)
Troglodytes micrurus, Rüpp., Neue Wirb. Abyss. pl. 41, fig. 2.
 Much like the figure as cited and very probably identical.
16. *CISTICOLA CURSITANS*, (Franklin.)
Prinia cursitans, Frank., Proc. Zool. Soc., London, 1831, p. 118.
"Cisticola oryzicola", Temm., ex Borneo." Label on spec. from Leyden Museum.
 Jard. Ill. Ind. Orn. pl. 6.
 Not distinguishable from India specimens, and we may add, scarcely from European *Sylvia cisticola*. The first that I have seen from Africa.
17. *DRYMOICA*, Swainson.
 Specimens of two species in the present collection I cannot refer to known Western African species of this genus, but must defer naming them until my leisure will allow a full examination of the group.
18. *SPERMESTES CUCULLATA*, Swainson.
Spermestes cucullata, Sw. B. of W. Af. i. p. 201.
 Von Müller Beitr. Orn. Afr. pl. 16.
 Specimens labelled as adults of both sexes are very similar, but the young are quite different. The entire plumage is dull brown, like the back of the adult, tinged with ashy on the lower parts, and nearly white in the middle of the abdomen. Not a vestige of the glossy metallic tints of the head, breast and sides of the adult.
 The Baron Von Müller gives very handsome figures of adults, as above.
19. *ORTYGOSPIZA ATRICOLLIS*, (Vieillot.)
Fringilla atricollis, Vieill. Nouv. Dict. xii. p. 182, (1817.)
Fringilla polyzona, Temm.?
 Temm. pl. col. 221, fig. 3?
 Specimens in the present collection agree with the description of Vieillot, but though apparently in adult plumage, have no white on the throat nor around the eyes in either sex. I have also before me seven specimens of the true *O. polyzona* from "Gambia," in which this character is present. In other respects the two are very similar.
 Females have the throat pale cinereous, not black as in the male.
20. *ESTRELLA MELPODA*, (Vieillot.)
Fringilla melpoda, Vieill., Ency. Meth. p. 987.
 Vieill. Ois. Ch. pl. 7.
 Beautiful specimens of both species. The female only differs from the male in being lighter colored.
21. *FRINGILLARIA TAHAPISI*, (Smith.)
"Emberiza tahapisi", Smith, Rep. of S. Af. Exp."
 Two specimens which are the first appearance of this species in the fauna of Western Africa. Not having access to the description by Dr. Smith, I apply this name on the faith of that accurate ornithologist Mr. Jules Verreaux, who presented specimens from South Africa to the Museum of this Academy. Those specimens are strictly identical with the present, and are labelled by Mr. Verreaux "type de Smith."
22. *SYCOBIUS NIGERRIMUS*, (Vieillot.)
Ploceus nigerrimus, Vieill. Ency. Meth. p. 700.
Ploceus niger, Swains, Cab. Cy. Menag. p. 306.
 Specimens labelled by Mr. DuChaillu as both sexes of this little-known species are entirely black, and differ only slightly in size and lustre of plumage. The young are however very different, having the upper parts dark green with lon-

gitudinal stripes of brown and black, under parts dull yellow darker on the sides, wings and tail in some specimens brown, in others black. Bill lighter colored than in the adult, under mandible nearly white. In young plumage this bird might readily be mistaken for a distinct species.

23. *SYCOBIUS MALIMBUS*, (Temminck.)

Textor malimbus, Temm.

Malimbus cristatus, Vieill. (♀)

Sycobius rubricollis, Sw. An. Menag. p. 306.

Euplectus rufovelatus, Fraser, Proc. Zool. Soc. London, 1842 p. 42? Vieill. Ois. Chant. pl. 43. Fras. Zool. Typ. pl. 46?

I have at this moment specimens before me of all known species of *Sycobius* as given by late ornithologists, but am not without difficulty in referring a single specimen in the present collection to either of them. It has a large occipital spot or band of bright scarlet extending somewhat to the sides of the neck. Front and cheeks fully including and above the eyes and all other parts of the plumage fine lustrous black.

The present specimen is exactly of the size of Vieillot's figure cited above, but too small for that of Fraser, though in color resembling the head in the second figure of his plate. I have no doubt that it is the bird represented by Vieillot though perhaps not in adult plumage, but I have doubts of its being Fraser's bird, and also of the supposed identity of the two. A fine specimen of *S. rufovelatus* now before me is larger, with the bill straighter and thicker, and very nearly as represented in Fraser's plate.

In the present bird the front to the eyes is lustrous black. I regard it as *S. malimbus* in a stage of plumage analogous to that represented by Fraser in the second figure of his plate.

24. *HYPHANTORNIS FLAVIGULA*, Hartlaub.

Hyphantornis flavigula, Hartl. Rev. Zool. 1845, p. 406.

Hyphantornis Grayi, Verreaux Rev. et Mag. Zool. 1851, p. 514.

In numerous specimens received from Mr. DuChaillu, the above are invariably labelled as males and females of the same species.

25. *COLIOSTRUTHUS MACROURUS*, (Gmelin.)

Loxia macroura, Gm. Syst. Nat. i. p. 845, (1788.)

Fringilla flavoptera, Vieill.

Vidua chrysonota, Sw. B. of W. Af. i. p. 178.

Buff. Pl. Enl. 183, fig. 1. Vieill. Ois. Chant. pl. 41.

In beautiful plumage. This is the most southern locality that I have ever seen for this species.

26. *CORYTHAIX PERSA*, (Linnæus.)

Cuculus persa, Linn. Syst. Nat. i. p. 171, (1766.)

Edwards' Birds, pl. 7.

The species with a crest having red tips. Apparently common in Equatorial Africa.

27. *TOCKUS FASCIATUS*, (Shaw.)

Buceros fasciatus, Shaw.

Le Vaill. B. of Af. pl. 233.

Several specimens of the real *T. fasciatus*, with the second and third feathers of the tail pure white, though the first and those of the middle are black. In the young bird the tips only of the two feathers are white. *T. semifasciatus*, Temm. Cabanis' Jour. 1855, p. 356, is very much like the present bird in young plumage, but a specimen now before me (of *T. semifasciatus*) from the Rivoli collection is considerably larger and has a mature appearance.

28. *TOCKUS CAMURUS*, nobis.

The smallest known bird of this group. Allied to, and somewhat resembling, *T. melanoleucus* (Le Vaill. Ois. d'Af. pl. 234). Bill greatly compressed, with a

sharp slightly raised culmen, curved. Wing short, fifth and sixth quills longest : tail rather long.

Total length about $13\frac{1}{2}$ inches, wing 6, tail $6\frac{1}{2}$ inches.

Bill red. Entire upper parts, throat and breast amber brown, strongly tinged with fulvous on the rump, and with greenish bronze on the wings and tail. Wing coverts tipped with white, forming two conspicuous bars diagonally crossing the wing. Primaries with a single spot of pale fulvous on each web, larger on the inner, secondaries edged with pale fulvous on both webs. Under parts from the breast white, tinged with cinereous on the sides. Tail amber brown, with a greenish bronzed lustre, tipped with white, shafts of tail feathers above yellowish white inclining to golden ; below white. Legs dark.

Hab. Cape Lopez, Western Africa. Discovered by Mr. P. B. DuChaillu.

This is the smallest bird of the genera *Buceros* and *Tockus* that I have ever seen, and appears to be the smallest known species. It resembles in some measure *T. melanoleucus* as above mentioned, but is much smaller. Three specimens are in the collection, essentially alike.

29. HALCYON SENEGALENSIS, (Linnæus.)

Alcedo senegalensis, Linn. Syst. Nat. i. p. 180, (1766.)

Swains. Zool. Ill. pl. 27.

Not to be distinguished from specimens obtained at more northern localities.

30. CAPRIMULGUS BINOTATUS, Temminck.

Caprimulgus binotatus, Temm. Cabanis' Jour. 1855, p. 355.

The only species of this group that has been received from the Gaboon country. It appears to be this species and is a true *Caprimulgus* allied to *C. pectoralis*, Cuvier, *C. poliocephalus*, Rüppel and others.

31. ANTHREPTES FRASERI, Jardine.

Anthreptes Frazeri, Jard. Ill. Orn. n. s. p. pl. 52.

A single specimen very nearly as described and figured above, but having some appearance of immaturity.

32. NECTARINIA CUPREA, (Shaw.)

Certhia cuprea, Shaw.

Cinnerys erythronotus, Sw. B. of W. Af. ii. p. 30, pl. 15.

Vieill. Ois. dor. pl. 27.

Numerous specimens. The female and young are dull yellowish green above and dull yellow beneath ; totally unlike the male in plumage.

33. NECTARINIA CYANOCEPHALA, (Vieill.)

Certhia cyanocephala, Vieill.

Cinnerys chloronotus, Sw. B. of W. Af. ii. p. 136, pl. 16.

Vieill. Ois. dor. pl. 7, 25. Jardine Mon. pl. 10.

Apparently a common species at Cape Lopez.

34. CENTROPUS MONACHUS, Rüppell.

Centropus monachus, Rüpp. Faun. Abyss. pl. 21.

A single specimen strictly identical with specimens in the Academy Museum from Mr. Rüppell's collection. Larger than *C. senegalensis*.

35. MEROPS BICOLOR, Daudin.

Merops bicolor, Daud. Ann. du Mus. ii. pl. 440, pl. 62, fig. 1.

Merops malimbus, Shaw Nat. Misc. pl. 701.

Vieill. Gal. i. pl. 186. Le Vaill. Guep. pl. 5.

Apparently abundant in Equatorial Africa.

36. MEROPS BULLOCKIOIDES, A. Smith.

Merops Bullockioides, A. Smith, S. Af. Quar. Jour. 1834.

Smith, Ill. Zool. S. Af. Aves, pl. 9.

Several specimens of both sexes are in the collection.

37. *MEROPS VARIEGATUS*, Vieillot.
Merops variegatus, Vieill. Ency. Meth. p. 390.
Merops cyanipectus, Verreaux, Rev. et Mag. Zool., 1851, p. 269
 Le Vaill. Guep. pl. 7.
 Numerous specimens.
38. *DENDROBATES CAROLI*, (Malherbe.)
Chloropicus Caroli, Malh. Rev. et Mag. Zool. 1852, p. 550.
 Numerous specimens.
39. *POGONIAS HIRSUTUS*, Swainson.
Pogonias hirsutus, Sw. Zool. Ill. ii. pl. 72.
40. *OXYLOPHUS JACOBINUS*, (Boddaert.)
Cuculus jacobinus, Bodd. Tab. Pl. Enl.
Cuculus serratus, Sparrm. Mus. Carls.
Cuculus ater, Gm. Syst. Nat. i. p. 415.
 Sparrm. Mus. Carls. pl. 3. Lev. Ois d'Af. pl. 207, 208.
 The *debut* of this species in the fauna of Western Africa. One specimen only, which is probably a female, having the under parts dull ashy white. It is quite identical with specimens from Southern Africa in the museum of the Academy.
41. *TRERON CALVA*, (Temminck.)
Columba calva, Temm. Knip and Prev. Pigeons, ii. pl. 7.
42. *PERISTERA CHALCOSPILOS*, (Wagler.)
Columba chalcospilos, Wagler. Rüpp. Syst. Uebers. pl. 38. Buff. pl. Ent. 160.
43. *PERISTERA PUELLA*, Schlegel.
Peristera puella, Schlegel. Beydrag. Dierk. i. p. 17, pl. 6, (1848.)
 One of the most beautiful of the Doves of Africa. Our specimens are precisely as given in the highly valuable work above cited.
44. *FRANCOLINUS LATHAMI*, Hartlaub.
Francolinus Lathamii, Hartl. Cab. Jour. 1855, p. 210.
 "Francolinus Peli, Temm." Label on specimen from Leyden Museum.
 Leona Partridge, Lath. Gen. Hist. viii. p. 273.
 A very handsome species well described by Latham. This bird belongs strictly to the same group as *Coturnix histrionica*, Hartlaub, and bears a general resemblance to that species, but is quite distinct. Sexes nearly alike, the female having the white spots of the under parts larger.
45. *FRANCOLINUS SQUAMATUS*, nobis.
 About the size of and belonging to the same group as *F. nudicollis* and *F. Natalensis*. Bill rather strong, sixth quill longest; tertiaries longer than primaries; upper tail coverts long; legs stout; tarsus in the male with one short, sharp spur. Total length about 14 inches; wing $7\frac{1}{2}$; tail $3\frac{1}{2}$ inches. Entire upper parts dark reddish brown, unspotted on the head, variegated with dull reddish white on the back, and with irregular transverse stripes of black on the back, rump and wings. Feathers of the neck edged with ashy white. Entire under parts brownish cinereous with a tinge of fulvous, every feather large and having a dark brown shaft, and conspicuously edged with the same color. Throat paler, breast darker. Upper mandible dark bluish, under mandible red, feet red. Under tail coverts dark reddish brown. Female smaller.
 With a large collection before me, including very nearly all the species of Dr. Smith, I have failed to recognize this bird as a described species. The present specimens are the first that I have ever seen. The large and scale-like character of the plumage of the under parts is quite peculiar.
46. *NUMIDA PLUMIFERA*, nobis.
 Of the same subgeneric group (*Guttera*) as *N. cristata*, and bearing a general resemblance to that species. Head above with an ample crest of straight, erect, narrow feathers; occiput, throat and upper part of neck covered with short

downy feathers in the male, naked in the female. Bill rather stout; rictal membrane small; fourth and fifth quills longest; tertiaries longer than primaries; upper and under tail coverts ample and long; legs stout. Total length about $16\frac{1}{2}$ inches; wing 9; tail 5 inches.

Colors generally resembling those of *N. cristata*, but without the black of the neck and breast of that species. Crest in both sexes and downy plumage of the head in the male black; secondary quills with their outer webs yellowish white; tertiaries with narrow longitudinal stripes of bluish white on their outer and exposed webs. All other parts of the plumage above and below (including the neck and breast) bluish black or slate color, with numerous circular spots of bluish white rather larger on the neck. Bill bluish, lighter at the tip, legs bluish. Female similar to the male, but with the white spots rather larger on the neck; naked skin of the head dark, (naked in the female only.)

This interesting addition to African Ornithology is strictly of the same group as *Numida cristata*, Pallas, Spic. Zool. pl. 2, but is readily to be distinguished by its erect crest, which is peculiar, and the absence of the black neck and breast of that species. The white spots on all parts of the body are smaller than in *N. cristata*, and extend to the neck, breast and tibiae, which in that species are black. Specimens of both sexes are in the collection.

Genus PHASIDUS.

Allied to *Numida*, Linn. and to *Agelastus*, Temm. Bill strong, curved, rather wide and rounded at the tip; wing moderate; fifth and sixth primaries longest; tertiaries longer than primaries; tail moderate; tarsus stout, with large, somewhat rounded or hexagonal scales in front; toes rather long, claws long, stout. Head naked, except a longitudinal stripe on the top of the head.

47. PHASIDUS NIGER, nobis.

Head and throat naked, but with a longitudinal stripe of short black feathers from the base of the bill to the occiput, ending abruptly. Neck before and throat with a few short black feathers, behind and below the bare space densely covered with short black feathers.

Entire plumage black, very obscurely punctated and vermiculated, with a lighter shade on the upper parts and lighter on the middle of the abdomen. Bill corneous, with the edges of the mandibles nearly white; legs and toes dark corneous. Naked space on the head probably yellow or light red. Male.

Total length about 17 inches; wing 8; tail 6 inches.

This is the most remarkable bird yet discovered by Mr. DuChaillu. It belongs to the same group as *Numida* and *Agelastus*, but is more intimately allied to the latter, of which the only known form is *Agelastus meleagrides*, Temm. Cabanis' Jour. 1855, p. 356, and for a fine specimen of which this Academy is indebted to the liberality of the distinguished naturalist by whom it was first introduced to the notice of ornithologists.

A single specimen, labelled as a male, is in the collection, and is from a few miles in the interior, at Cape Lopez. The general appearance of this bird is not unlike that of *Gallophasius purpureus*, Gray, but is generically distinct.

48. HIATICULA PECUARIA, (Temminck.)

Charadrius pecuarius, Temm. Pl. Col. v. pl. 183.

Identical with South-African specimens in the Academy's Museum.

49. NYCTICORAX EUROPEUS, Stephens.

Nycticorax europæus, Steph. Gould B. of Eur. pl. 279.

A single specimen in very mature plumage. Rather lighter in color than specimens from Europe, and with the white of the front extending over and behind the eye.

The Committee on Proceedings presented a Special Report, which was adopted.

The Corresponding Secretary read his Report for last month.

The Recording Secretary presented the following

ANNUAL REPORT FOR 1856.

During the past year, December 1, 1855, to November 30th, 1856, there have been elected thirty-one Members and ten Correspondents.

Six Members have died, to wit: Mr. Thomas Fisher, Isaac A. Pennypacker, M. D., Mr. Jonathan Edwards Taggart, Madison Rush, late U. S. Navy, Mr. Samuel B. Ashmead, and Edmund Lang, M. D.

During the same period the following Papers have been presented to the Academy for publication in the Journal or Proceedings:—

By the Reverend M. J. Berkeley and the Reverend M. A. Curtis. "A Commentary on the 'Synopsis Fungorum in America Boreali Media Degentium.' By L. De Schweinitz." Published in the Journal.

By John Cassin, four, to wit: "Notices of some new and little-known Birds in the collection of the U. S. Exploring Expedition in the Vincennes and Peacock, and in the Museum of the Academy of Natural Sciences of Philadelphia;" "Notes on North American Birds in the collection of the Academy of Natural Sciences of Philadelphia;" "Descriptions of new species of African Birds in the Museum of the Academy of Natural Sciences of Philadelphia, collected by Mr. P. B. DuChaillu, in Equatorial Africa;" "Descriptions of new species of Birds in the National Museum, Washington, and in the Museum of the Academy of Natural Sciences of Philadelphia."

By T. A. Conrad, two, to wit: "Notes on the Miocene and Post-pliocene Deposits of California, with descriptions of two new fossil corals;" "Description of a new species of *Pentamerus*."

By James Deane, M. D. "On the Sandstone Fossils of the Connecticut river." Published in the Journal.

By Elias Durand. "*Plantæ Kaneanæ Articæ et Polares*." Published in the Journal.

By Charles Girard, M. D., four, to wit: "Contributions to the Ichthyology of the Western Coast of the United States;" "On a new genus and species of *Urodela*;" "Researches upon the Cyprinoid Fishes inhabiting the fresh waters of the United States of America, west of the Mississippi Valley;" "Notice upon the species of the genus *Salmo*, of authors."

By Edward Hallowell, M. D., seven, to wit: "On a new species of *Ambystoma* from Lake Superior;" "Descriptions of two new *Urodeles* from Georgia;" "Notes on the Reptiles in the collection of the Academy of Natural Sciences of Philadelphia;" "On several new Reptiles in the collection of the Academy of Natural Sciences of Philadelphia;" "Notes on the Reptiles in the collection of the Academy of Natural Sciences of Philadelphia;" "Notice of a collection of Reptiles from Kansas and Nebraska;" "On a new and remarkable genus of *Ranidæ* from the river Parana."

By L. Harper. "*Ceratites Americanus*."

By Rufus Haymond, M. D. "Birds of Southern Indiana."

By Thomas P. James. "An enumeration of Mosses detected in the Northern United States, which are not comprised in Gray's Manual."

By Robert Kennicott. "Description of a new Snake from Illinois."

By Isaac Lea, LL. D., nine, to wit: "Description of new fresh water shells of California;" "Description of a new species of *Triqueta*;" "Description of a new genus of *Naiades*;" "Description of twenty-five species of *Exotic Unios*;" "Description of four new species of *Exotic Unios*;" "Description of thirteen species of *Exotic Peristoma*;" "Description of fifteen new species of *Melania*;" "On the *Byssus* in the genus *Unio*;" "Description of eleven new species of *Uniones* from Georgia."

By Major John LeConte, four, to wit: "Observations on the North American Bats;" "Descriptive Catalogue of the Raninæ of the United States;" "Description of two new species of *Hesperomys*;" "New species of *Hyla*."

By John L. LeConte, M. D., six, to wit: "Synopsis of the *Mycetophagidæ* of the United States;" "Synopsis of the *Phalacridæ* of the United States;" "Note on the genus *Lithodus* of Schœnherr;" "Notice of three genera of *Scarabæidæ* in the United States;" "Analytical Table of the species of *Chlæneus* found in the United States;" "Synopsis of the *Melolonthidæ* of the United States." Published in the Journal.

By Joseph Leidy, M. D., sixteen, to wit: "Notices of some Tape Worms;" "Descriptions of two new *Ichthyodorulites*;" "A synopsis of Entozoa and some of their Ecto-congeners observed by the Author;" "Notice of some Remains of extinct Mammalia recently discovered by Dr. F. V. Hayden in the 'bad lands' of Nebraska;" two papers; "Description of some Remains of Fishes from the Carboniferous and Devonian Formations of the United States;" published in the Journal. "Description of some remains of Extinct Mammalia;" published in the Journal. "Notices of remains of extinct Fishes and Reptiles discovered by Dr. F. V. Hayden, etc.;" "Notices of three extinct Fishes;" "Notice of the remains of a species of Seal from the Post-pliocene deposit of the Ottawa river;" "Notices of several genera of extinct Mammalia, previously less perfectly characterized;" "Notice of some remains of extinct Vertebrated Animals;" "Notices of extinct Vertebrated Animals of New Jersey, etc.;" "Notices of remains of extinct Vertebrated Animals discovered by Prof. E. Emmons;" "Notices of some remains of fishes discovered by John E. Emory;" "Notices of remains of two species of seal."

By F. B. Meek and F. V. Hayden, M. D., four, to wit: "Descriptions of thirty new species of Gasteropoda from the Cretaceous formation of Nebraska Territory;" "Descriptions of new species of Gasteropoda and Cephalopoda from the Cretaceous formation of Nebraska Territory;" "Descriptions of thirty new species of Acephala and Gasteropoda from the Cretaceous Formation of Nebraska Territory;" "Descriptions of new species of Acephala and Gasteropoda, from the Tertiary Formation of Nebraska Territory;" "Descriptions of new fossil species of Mollusca collected by Dr. F. V. Hayden in Nebraska Territory."

By James Aitken Meigs, M. D. "Catalogue of Human Crania in the collection of the late Samuel George Morton, M. D., etc."

By J. S. Newberry, M. D. "Descriptions of several new genera and species of Fossil Fishes, from the Carboniferous Strata of Ohio."

By W. F. Rogers. "Synopsis of the *Chrysomela* and allied genera inhabiting the United States."

By Abraham Sager. "Descriptions of *Myriapoda*, supposed to be new."

By Phillip Lutley Selater, two, to wit: "Description of a new species of *Tanager* of the genus *Saltator*;" "Characteristics of an apparently undescribed Bird belonging to the genus *Spix*, etc."

By B. F. Shumard, M. D., and L. P. Yandell, M. D. "Notice of a new fossil genus belonging to the Family *Blastoidea*, from the Devonian Strata near Louisville, Ky."

By W. J. Taylor. "Examination of Meteoric Iron, from Xiquipilco, Mexico."

In all seventy-three.

All of which is respectfully submitted by

B. HOWARD RAND, M. D.,

Recording Secretary.

Dec. 30th, 1856.

The following Report of the Librarian was read and adopted .

LIBRARIAN'S REPORT FOR 1856.

The additions to the Library of the Academy during the current year amount to 1,449, of which number 295 are complete volumes, and 1,154 are pamphlets, scientific periodicals, &c. The sources whence these books have been obtained, and the general subjects upon which they treat, are presented in the following table :

SUBJECTS.	From Dr. T. B. Wilson.		From Mr. E. Wilson.		From Authors Editors, Mem- bers, &c.,		From Socie- ties, &c.,		Total.	
	Vols.	Pamph.	Vols.	Pamph.	Vols.	Pamph.	Vols.	Pamph.	Vols.	Pamph.
Journals, Transactions, Pro- ceedings, Memoirs, &c.,	18	307			6	62	54	151	78	520
Natural Sciences,	89	254	5	3 5	33	77	2	1	129	367
Anatomy and Physiology,	12	8	2	16 2	2	4		1	16	165
Physics and Chemistry,	1	1	3	1 0	2	2	1		7	13
General Natural History,	12	7		4	1	1			13	12
Ethnology and Languages,	3	2		2		2	1		4	6
Voyages, Maps, &c.,	17								17	
Miscellaneous,	8	4	5	47	12	18	6	2	31	71
Total,									295	1154

By referring to the last Report of the late Librarian, Dr. W. S. Zantzinger, it will be seen that the total increase for the present year exceeds that for 1855 by 592. In December last, Dr. Z. estimated that the Library contained about 15,500 volumes, tracts, periodicals, serials, &c. By the additions for 1856, this number has been swelled to 16,949.

Respectfully submitted by

J. AITKEN MEIGS, *Librarian*.

Dec. 30th, 1856.

The Curators presented their Annual Report which was read, adopted and referred to the Committee on Proceedings.

REPORT OF THE CURATORS FOR 1856.

The Curators take pleasure in reporting that the Museum of the Academy is in an excellent condition of preservation, and that it has received valuable accessions to all its departments during the year just about closing.

Since the last annual report was presented to the Academy, the arrangement of the Ichthyological collection has been undertaken by Drs. R. E. Bridges and J. Cheston Morris; and W. J. Binney, Esq. has commenced the arrangement of the Conchological collection. The collection of Birds continues to be arranged by Dr. T. B. Wilson. The collections of Minerals, Crustacea, Insects, and Fossil plants have been arranged prior to this year as stated in previous reports. No department is perhaps better arranged than that of the Herpetological collection, for which the Academy is indebted to the information and zeal of Dr. E. Hallowell. The collection of Vertebrate Remains has been recently arranged by Dr. J. Leidy. Mr. E. Durand has made considerable progress in the formation of an American Herbarium, which he informs us will be of a very complete character. In several departments, the Academy yet needs some assistance before the Museum shall be completely arranged, more especially in the departments of Mammalogy, Invertebrate Palæontology, and Geology.

During the year 1856, the donations to the different departments of the Museum have been as follows:—

Mammals.—Of these 33 specimens of 14 species have been added to the collection; and among them is a fine specimen of the Musk Ox, deposited by Dr. E. K. Kane, and one of the Walrus, presented by Sandwith Drinker, Esq.

Birds.—W. S. Wilson, Esq. presented 146 specimens of 129 species of Birds ; and 30 specimens of 16 species were presented by others.

Reptiles.—Dr. W. S. Hammond, U. S. A., presented 100 specimens of 40 species of Reptiles from Kansas and Nebraska ; and Dr. A. Heermann presented 70 specimens of 30 species from Texas. Besides these collections, there have been received 415 specimens of 140 species through donation and exchange. Among the chief donors are Drs. Miles, Hallowell and Uhler, and Major LeConte.

Fishes.—Of these about 100 specimens of 48 species have been presented, chiefly by Dr. Watson, Mr. Ashmead, and Dr. Leidy.

Mollusks.—Of these about 800 specimens of 350 species have been presented. Among them are 100 species of the rarer marine shells of the United States coast, presented by Wm. Stimpson, Esq. ; and 111 species of Achatinella, from the Sandwich Islands, presented by Dr. W. Newcomb, of Albany. The donors of the others are chiefly F. A. Sauvalle, of Cuba, Dr. T. J. Turner, U. S. N., Mr. Binney, and Mr. Ashmead.

Insects.—Dr. T. B. Wilson presented 2400 specimens of 900 species of Coleoptera ; Mr. Guex 1500 of 356 species of the same order ; and G. J. Barnet, Esq. 700 of 80 species. Besides these there were presented several small collections of Coleoptera, Neuroptera, and Lepidoptera.

Crustaceans, Arachnides, Myriapods, Annelides, and Zoophytes.—Of Crustaceans 358 specimens of 65 species have been presented, chiefly by W. S. Wilson, Mr. Ashmead, and Dr. Davidson ; of Arachnides 8 specimens of 4 species have been presented ; of Annelides 3 specimens of 2 species ; and of Zoophytes 104 specimens of 40 species, chiefly from Mr. Ashmead.

Comparative Anatomy.—Of skeletons there have been received 9, among which are those of the Polar Bear and the Delphinapterus, presented by Dr. E. K. Kane. Of human skulls 21 have been received through Drs. McClellan, Ruschenberger, Kane and Mitchell, and Mr. Richard Harlan. Of other skulls 6 have been presented, chiefly by W. W. Wood, Esq.

Botany.—Collections of plants have been presented by Mr. Tuckerman, Dr. Kane, Mr. Eckert and Dr. Wilson. Mr. C. E. Smith presented 500 species ; Sir W. Hooker 158 Himalaya species, and Mr. Ashmead 66 species of Marine Algæ. Besides these there have been received 16 species of fruits, &c.

Palæontology.—Of Vertebrate remains 40 specimens have been presented by Dr. S. W. Clanton ; a collection of bones of the Megalonyx, from Alabama, by Prof. Tuomey, and 130 specimens from various donors. Besides these Mr. Richard Harlan has presented numerous moulds and casts of remains of Palæotherium, Deinotherium, Megalosaurus, &c. from the collection of his father, Dr. Harlan. Of Invertebrate remains 80 specimens were presented ; and of Fossil plants 38 specimens, the latter being chiefly from Mr. Schæffer and W. F. Rogers.

Mineralogy.—Of Minerals 98 specimens were presented, among which the most interesting is a specimen, over 16 lbs in weight, of Cinnabar, from the Almadin mines of California, from Capt. J. Henry Smith.

Respectfully submitted by

JOSEPH LEIDY,
Chairman of the Curators.

The Treasurer read his Annual Report, which was referred to the Auditors.

The Report of the Publication Committee was deferred until the next meeting for business.

The Academy then went into an election for Officers and a Publication Committee for the ensuing year (1857.) The following named gentlemen were announced as duly elected :—

<i>President,</i>	-	-	-	-	-	GEORGE ORD.
<i>Vice Presidents,</i>	-	-	-	-	-	Robert Bridges, M.D. Isaac Lea, LL.D.
<i>Corresponding Secretary,</i>	-	-	-	-	-	John L. LeConte, M.D.
<i>Recording Secretary,</i>	-	-	-	-	-	B. Howard Rand, M.D.
<i>Librarian,</i>	-	-	-	-	-	J. Aitken Meigs, M.D.
<i>Treasurer,</i>	-	-	-	-	-	George W. Carpenter.
<i>Curators,</i>	-	-	-	-	-	Joseph Leidy, M.D. William S. Vaux, Samuel Ashmead, John Cassin.
<i>Auditors,</i>	-	-	-	-	-	William S. Vaux, Samuel Ashmead, Robert Pearsall,
<i>Publication Committee,</i>	-	-	-	-	-	William S. Vaux, Robert Bridges, Isaac Lea, H. Cooper Hanson, Joseph Leidy.

ELECTION.

Prof. Henry Coppée, Thomas Dunlap, Esq., Louis de Vesey, U. S. A.,
Prof. Samuel D. Gross, and Dr. Alexander Hamilton Smith, were
elected members of the Academy.